E **B3E027** **Total Pages: 2**

Reg. No._____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

THIRD SEMESTER B.TECH DEGREE EXAMINATION, JANUARY 2017

Course Code**: CH-207**

Course Name**: CHEMISTRY FOR PROCESS ENGINEERS - I**

Max. Marks: 100 Duration: 3Hours

PART A

(Answer any two questions. 15 marks for each question)

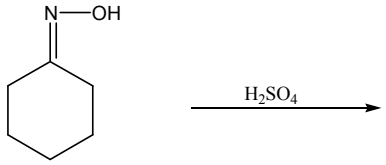
1. a .What are annulenes? Explain the aromaticity of [10]annulene and [14]annulene (4)

   b. Compare the aromaticity and basisity of pyridine and pyrrole (5)

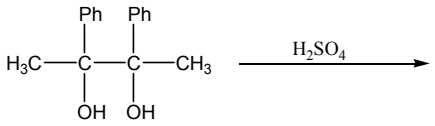
   c. Based on electronic concept explain the directive effect of the substituents –COOH and $–NH_2$ in electrophilic aromatic substitution reactions. What will be formed when benzoic acid is nitrated? (6)

2. Predict product. Explain with mechanism. (5×3 = 15)

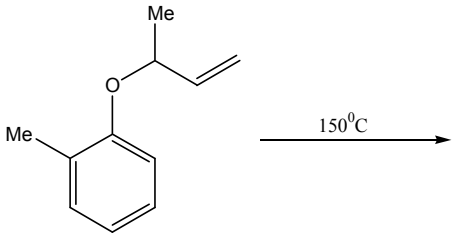
(a)



(b)



(c)



3. a .Why crown ether is important in phase transfer catalysis? (5)

   b. Arrange the following in the increasing order of stability. Justify your answer.

   $(C_6H_5)_3C^+$, $CH_2{=}CHCH_2^+$, CH_3^+, $(CH_3)_2CH^+$ (5)

   c. Explain elimination addition mechanism through benzyne formation. (5)

PART B

(Answer any two questions. 15 marks for each question)

4. a. What are switter ions? (3)

   b. What happens when $\alpha-, \beta-,$ and $\gamma-$ aminoacids are heated? (4)

   c. Explain the secondary structure of proteins (4)

d. Synthesize D- glucose from D- arabinose by Kiliani synthesis. (4)

5. a. Starting with aniline, how can you synthesis P- rosaniline? What is its use? (5)

b. Give an account on the classification of detergent. Explain its cleansing action. (5)

c. Explain the synthesis and applications of PLA (5)

6. Explain the following

a. Muta rotation (3)

b. Gabriel phthallimide synthesis (4)

c. Organo phosphate insecticide (4)

d. Structure and synthesis of saccharine (4)

PART C

(Answer any two questions. 20 marks for each question)

7. a. Explain the structural difference of starch and cellulose (5)

b. What is the structure and function of retinol? (5)

c. Differentiate apoenzyme and holoenzyme (5)

d. What are enzyme inhibitors? (5)

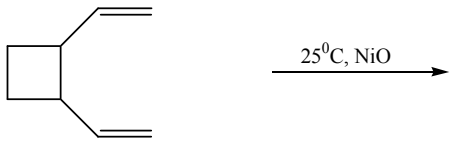
8. a .What is quenching? (5)

b. Write a note on chemiluminascence? (5)

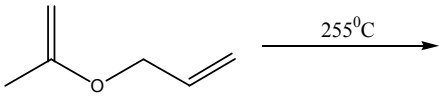
c. Explain Jablonski diagram with a neat sketch (10)

9. Predict product of the following. Explain with mechanism (5×4)

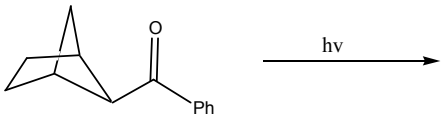
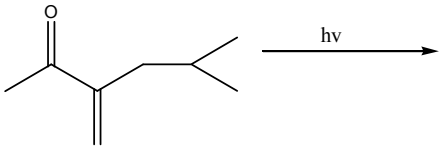
(a)



(b)



(c)



(b)